

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1-24. (Cancelled)

25. (New) A crystal of BTK kinase domain of SEQ ID NO:4 having a space group of $P2_12_12_1$ and a unit cell having the dimensions of a , b , and c , where a is 45 Å plus or minus 5 Å, b is 104 Å plus or minus 10 Å, and c is 116 Å plus or minus 10 Å.

26. (New) The crystal of claim 1, wherein analysis of a pattern of X-ray diffraction from the crystal produces a structure defined by the atomic coordinates listed in Table 1.

27. (New) A method for identifying a compound that inhibits BTK activity comprising:

- a) preparing a crystal of amino acid residues of SEQ ID NO:4 ;
- b) crystallizing the BTK kinase domain at 4 °C using a hanging drop method, wherein the drop comprises 2 microliters of a solution comprising 2mg/ml of purified BTK kinase domain and 1 microliter of reservoir solution and is equilibrated with 600 microliters of the reservoir solution, wherein the reservoir solution comprises 20% polyethylene glycol, 100 mM Tris/HCl, and 1 mM DTT, the reservoir solution being buffered at a pH of about 8.0.
- c) determining a structure of the BTK kinase domain by X-ray diffraction methods, wherein said structure is defined by the atomic coordinates of Table 1;
- d) using said determined structure to identify a compound that complements the crystal's determined structure, thereby identifying a compound that inhibits BTK activity.

28. (New) A method for identifying a compound that inhibits BTK activity comprising:
- a) obtaining the crystal of claim 1;
 - b) determining by X-ray diffraction method, atomic coordinates defining a structure of the BTK kinase domain; and
 - c) using the structure defined by the atomic coordinates to identify a compound that interacts with the BTK kinase domain and thereby identifying a compound that inhibits BTK activity.
29. (New) The method of claim 17, further comprising:
- d) assaying the identified compound for BTK kinase inhibition activity.
30. (New) A method for preparing a crystal of a BTK kinase domain -comprising:
- a) preparing a purified BTK kinase domain in a solution of 20mM Tris/HCl, pH 8.5, 50 mM NaCl, and 2mM DTT, the kinase domain having the amino acid sequence of SEQ ID NO: 4; and
 - b) crystallizing the purified BTK kinase domain at 4 °C using a hanging drop method, wherein the drop comprises 2 microliters of a solution comprising 2mg/ml of purified BTK kinase domain and 1 microliter of reservoir solution comprising 20% polyethylene glycol, 100 mM Tris/HCl, 1 mM DTT, buffered to a pH of about 8.0; and wherein the drop is equilibrated with 600 microliters of the reservoir solution.
31. A crystal prepared by the process of claim 20.
32. The method of claim 17, wherein said structure is defined by coordinates of Table 1.
33. The method of claim 20, wherein said crystal has a structure defined by coordinates of Table 1.